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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/026,152 | 12/21/2001 | Brian Scott Thornton | RR1732 | 8234 |
| 28357 | 7590 | 05/05/2005 | EXAMINER | |
| SAMUEL A. KASSATLY 20690 View Oaks Way SAN JOSE, CA 95120 | | | DAVIS, DAVID DONALD | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2652 | |

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/026,152 | Applicant(s) THORNTON ET AL. | |
| | Examiner David D. Davis | Art Unit 2652 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____. | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____. 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: _____. |
|--|--|

DETAILED ACTION

Continued Prosecution Application

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/18/2005 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 30-34, 37 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Erpelding et al (US 5,781,379). As per claim 30, Erpelding et al shows in figure 10 a method of manufacturing a head gimbal assembly for use in a data storage system including fabricating a slider 180 having an air bearing surface 208 and a backside 212 that opposes the air bearing surface 208. Figure 10 also shows depositing a plurality of solder bumps 195 & 200 on the backside 212. Additionally shown in figure 10 is positioning flexure 192 having at least a thermal conductive tongue coated with an insulation layer 234. Figures 11-14 show a pattern of receptacles 238 that extend through the insulation layer to the flexure tongue. Figure 11 also shows the solder bumps substantially aligned with the receptacles.

Art Unit: 2652

As per claim 31, inherent in Erpelding is metalizing the backside 212 because of the soldering to the flexure. As per claim 32, Erpelding et al discloses in column 2, lines 17-20, for example, that flexure tongue 230 includes stainless steel. As per claim 33, column 2, lines 15-16 of Erpelding et al discloses that the insulation layer includes polyimide. As per claim 34, figure 14 of Erpelding et al shows at least one receptacle having a substantially cylindrically shaped.

As per claim 37, figure 14 of Erpelding et al shows at least one solder bump being a substantially hemispherical in shape. As per claim 39, figures 11 and 14 show extending receptacles through the flexure tongue.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2652

6. Claims 35, 36 and 38 rejected under 35 U.S.C. 103(a) as being unpatentable over Erpelding et al (US 5,781,379). Erpelding et al shows the claimed invention. However, Erpelding is silent as to a solder bump having radius of approximately 80 microns; a receptacle having a radius of 75 microns; and a depth and radius greater than the depth.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to specify the dimensions of the solder bump and the receptacle of Erpelding. The rationale is as follows: The purpose of the solder bump and the receptacle is to attach the slider to the flexure. The bump and the receptacle need not have a radius of 80 microns or 75 microns, respectively, and a depth and radius greater than the depth to attach the slider to the flexure. Realizing this, one of ordinary skill in the art at the time the invention was made would have been motivated to specify the dimensions of the solder bump and the receptacle, which is well within the purview of a skilled artisan and absent an unobvious result, so as to provide enough area to attach the slider to the flexure for a secure arrangement.

Response to Arguments

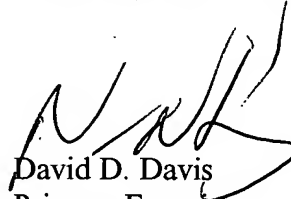
7. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Davis whose telephone number is (703) 308-1503. The examiner can normally be reached on Mon., Tues., Thurs. and Fri. between 7:30-6:00. The fax

Art Unit: 2652

phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900. Any other inquiry should be directed to the customer service center whose telephone number is (703) 306-0377.



David D. Davis
Primary Examiner
Art Unit 2652

ddd

April 28, 2005